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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/662,089

09/12/2003

Terry W. Glass

63032

8864

109 7590 01/05/2007

THE DOW CHEMICAL COMPANY  
INTELLECTUAL PROPERTY SECTION,  
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EXAMINER

FEELY, MICHAEL J

ART UNIT

PAPER NUMBER

1712

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/05/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/662,089

Applicant(s)

GLASS ET AL.

Examiner

Michael J. Feely

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-17 is/are pending in the application.
- 4a) Of the above claim(s) 6-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 13-17 is/are rejected.
- 7) ☒ Claim(s) 1,3-5,13 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Pending Claims***

1. Claims 1 and 3-17 are pending. Claims 6-12 have been withdrawn from consideration.

### ***Response to Amendment***

2. The rejection of claim 2 under 35 U.S.C. 102(b) as being anticipated by Silvis et al. (US Pat. No. 5,464,924) has been rendered moot by the cancellation of this claim.
3. The rejection of claims 1, 3-5, and 13-17 under 35 U.S.C. 102(b) as being anticipated by Silvis et al. (US Pat. No. 5,464,924) has been withdrawn.
4. The rejection of claims 1 and 3-5 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 5,464,924 stands.
5. The rejection of claim 2 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 5,464,924 has been rendered moot by the cancellation of this claim.

### ***Claim Objections***

6. Claims 1, 3-5, 13, and 17 are objected to because of the following informalities: claim 1 features "(change made for consistency)" in the second-to-last line of the claim; and claim 3 features "(change made for consistency)" in the fourth-to-last line of the claim. This should be removed, and claims 3-5, 13, and 17 are objected to because they are dependent from claim 1. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102/103***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

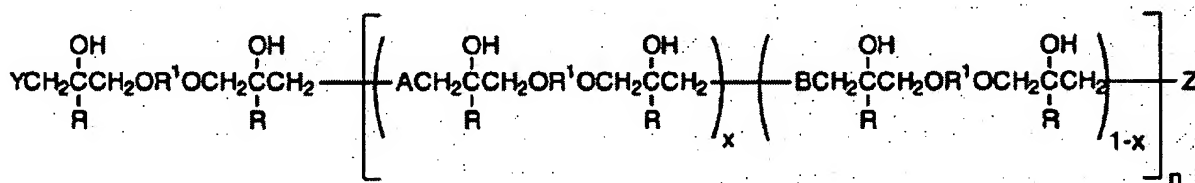
8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

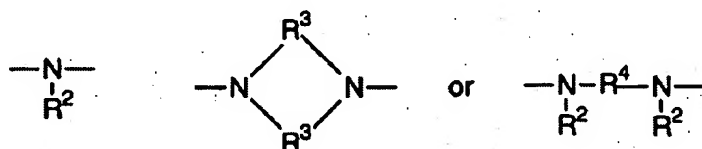
9. Claims 1, 3-5, and 13-17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Silvis et al. (US Pat. No. 5,464,924).

Regarding claims 1, 3-5, and 13, Silvis et al. disclose: (1) a copolyhydroxyaminoether having side chains of polyalkylene oxides (column 1, line 26 through column 2, line 45; column 2, line 51 through column 5, line 27) represented by the following formula:



wherein R is hydrogen or C<sub>1</sub>-C<sub>20</sub> alkyl (column 1, lines 50-51); R<sup>1</sup> is individually an aromatic or substituted aromatic moiety (column 2, lines 9-11); Y is an organic moiety that does not contain an epoxy group and Z is an organic moiety, optionally containing an epoxy group (column 3, lines 14-15); x is 0-0.99 (column 2, lines 12-13); and n is 5-400 (column 2, line 11);

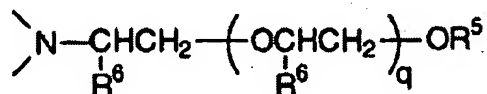
each A is individually an amino group represented by one of the formulas:



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wherein  $R^2$  is hydrocarbyl or substituted hydrocarbyl;  $R^3$  is  $C_2C_{10}$  hydrocarbylene or substituted hydrocarbylene;  $R^4$  is  $C_2-C_{20}$  hydrocarbylene or substituted hydrocarbylene, wherein the substituent(s) is hydroxyl, cyano, halo, arlyloxy, alkylamido, arylamido, alkylcarbonyl, or arylcarbonyl (column 1, line 40 through column 2, line 1); and

each B is represented by the formula:



wherein  $R^5$  is hydrocarbyl; each  $R^6$  is individually hydrogen, methyl, ethyl, hydrocarbyl or combinations thereof (column 2, lines 2-13);

(3) wherein R is hydrogen (column 1, lines 50-51); each  $R^1$  is individually *see claim for list* (column 1, line 65 through column 3, line 4); each  $R^2$  is individually *see claim for list* (column 1, line 40 through column 2, line 1);  $R^3$  and  $R^4$  are individually *see claim for list* (column 1, line 40 through column 2, line 1);  $R^5$  is  $C_1-C_{20}$  alkyl (column 2, lines 2-13);  $R^6$  is a mixture of hydrogen and methyl (column 1, line 40 through column 2, line 13); each of Y and Z are individually bis(2-hydroxyethyl)amino or N-(2-hydroxyethyl)piperazinyl (column 3, lines 32-54); q is 20-50 (column 2, line 11); and n is 10-25 (column 2, line 11); (4) wherein  $R^1$  is isopropylidenediphenylene (column 1, line 65 through column 3, line 4) and  $R^2$  is 2-hydroxyethyl (column 1, line 40 through column 2, line 1); (5) wherein each  $R^5$  is individually hydrogen, methyl, ethyl, propyl, butyl, benzyl or combinations thereof (column 2, lines 2-13); and Y and Z are bis(2-hydroxyethyl)amino (column 3, lines 32-54); and

(13) a composition comprising an aqueous fluid and the polymer of claim 1 (column 6, lines 3-12: *washing with water*).

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The teachings of Silvis et al. are deficient for two reasons: (1) they do not explicitly disclose the limitation, “x is 0-0.99 when q is greater than 40 *but less than 0.2 or greater than 0.8 when q is less than 40;*” and (2) they do not explicitly disclose that the polymer is water-soluble.

With respect to (1), Silvis et al. disclose a preferred embodiment wherein x is from about 0.3 to about 0.8 and from 0.2 to 0.8 (*see column 2, line 50-67; claims 1-8*). This is in concert with the limitation that y (q of the instant claims) is from about 1 to about 40. However, the reference also discloses a broader teaching, wherein x is from 0 to about 1, and y (q of the instant claims) is from about 1 to about 40 (*see column 2, lines 2-13*). In light of the broader teaching, at the very least, a *prima facie* case of obviousness exists due to range overlap – *see MPEP 2144.05*.

Furthermore, it should be noted that the claimed range “*but less than 0.2 or greater than 0.8 when q is less than 40*” is very close to the preferred (*and claimed*) ranges of Silvis et al. In light of this, it has been found that, “a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties,” – *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). Expectations of the same properties exist in the instant case because the end points of the ranges in question abut one another.

With respect to (2), the obvious or anticipated polymers of Silvis et al. would have inherently been water-soluble. It has been found that, “Products of identical chemical composition can not have mutually exclusive properties.” A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the

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properties applicant discloses and/or claims are necessarily present – *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Therefore, if not explicitly taught by Silvis et al., then the instantly claimed polymers would have been obvious in light of Silvis et al. because Silvis et al. disclose overlapping or abutting ranges of  $q$  ( $y$ ) and  $x$  that would have inherently yielded water-soluble materials.

Regarding claim 17, Silvis et al. disclose a process which comprises combining water and the polymer of claim 1, wherein the water optionally contains acids, bases, salts, solvents, or mixtures thereof (column 6, lines 3-12). They do not explicitly state that the polymer is dissolved in water.

It appears that this would have inherently taken place to some degree. The non-preferred embodiments of Silvis et al. (*based on the broader teaching of  $x$  is from 0 to about 1 and  $y$  ( $q$ ) is from about 1 to 40*) overlap the instantly claimed materials; thus, one of ordinary skill in the art would have expected the materials of Silvis et al. to demonstrate the same solubility characteristics as those of the instant invention.

Furthermore, it should be noted that the claimed range “*but less than 0.2 or greater than 0.8 when  $q$  is less than 40*” is very close to the preferred (*and claimed*) ranges of Silvis et al. In light of this, it has been found that, “a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties,” – *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). Expectations of the same properties exist in the instant case because the end points of the ranges in question abut one another.

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Regarding claims 14-16, Silvis et al. disclose: *(14 & 15)* an aqueous solution comprising a polymer represented by the formula *(see claims for structures and details)* (column 6, lines 3-12: *washing with water*). However, they fail to explicitly disclose: *(16)* wherein the viscosity increases as temperature is increased.

It appears that this would have inherently taken place. The non-preferred embodiments of Silvis et al. *(based on the broader teaching of x is from 0 to about 1 and y (q) is from about 1 to 40)* overlap the instantly claimed materials; thus, one of ordinary skill in the art would have expected the materials of Silvis et al. to demonstrate the same solubility/viscosity characteristics as those of the instant invention.

Furthermore, it should be noted that the claimed range “*but less than 0.2 or greater than 0.8 when q is less than 40*” is very close to the preferred *(and claimed)* ranges of Silvis et al. In light of this, it has been found that, “a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties,” – *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). Expectations of the same properties exist in the instant case because the end points of the ranges in question abut one another.

### ***Double Patenting***

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*



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*Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1 and 3-5 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 5,464,924. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the reasons set forth above in section 9 of the instant Office action.

#### ***Response to Arguments***

12. Applicant's arguments with respect to claims 1, 3-5, and 13-17 have been considered but are moot in view of the new ground(s) of rejection.

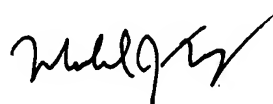
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*Communication*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael J. Feely  
Primary Examiner  
Art Unit 1712

January 1, 2007

**MICHAEL FEELY**  
**PRIMARY EXAMINER**  
**PRIMARY EXAMINER**